

Claims

We claim:

1. A wafer platform disposed within an ion implanter and including at least one wafer pad assembly for mounting and cooling a wafer, the wafer pad assembly comprising:

a wafer support pad having an upper surface for mounting said wafer and a lower surface, said lower surface of said wafer support pad being connected to a coolant passage having an inlet section and an outlet section arranged in an opposed configuration, wherein a mass of said inlet section is counterbalanced by a mass of said outlet section.

2. The wafer platform of claim 1 wherein an inlet end of said inlet section and an outlet end of said outlet are located proximate to the center of said upper surface.

3. The wafer platform of claim 1 wherein said coolant passage is arranged in a serpentine configuration.

4. The wafer platform of claim 1 wherein said inlet section and said outlet section are arranged in a symmetrical configuration.

5. The wafer platform of claim 1 wherein said lower surface of said wafer support pad is connected to a frame having an outer curved surface in mating engagement with a complementary shaped bearing surface of a housing wherein said wafer can be rotated about an axis.

6. The wafer platform of claim 5 wherein said bearing surface further comprises a feed passageway and a return passageway in fluid communication with a feed line and a return line, respectively.

7. The wafer platform of claim 6 wherein said feed line and said return line are in fluid communication with the inlet and the outlet of the cooling passage, respectively.

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8. The wafer platform of claim 5 wherein said frame further comprises a curved raceway secured to the housing via one or more cam followers.

9. The wafer platform of claim 6 wherein the outer curved surface of the frame functions to seal the feed and return passageways of the bearing surface.

10. The wafer platform of claim 1, wherein said at least one wafer pad assembly comprises a plurality of wafer pad assemblies located thereon.

11. A wafer pad assembly for mounting a wafer and being disposed in an ion implanter, the wafer pad assembly comprising:

a wafer support pad having an upper surface for mounting said wafer and a lower surface, said lower surface being connected to a frame having an outer curved surface in mating engagement with a complementary shaped bearing surface of a housing wherein said wafer can be rotated about an axis.

12. The wafer pad assembly of claim 11 wherein said outer curved surface is convex.

13. The wafer pad assembly of claim 11 wherein said frame further comprises a curved raceway secured to the housing via one or more cam followers.

14. The wafer pad assembly of claim 11 wherein said wafer is tiltable about an axis in the range of about 0 to about 45 degrees.

15. The wafer pad assembly of claim 11 wherein said frame further comprises opposed raceways secured to the housing via a plurality of cam followers.

16. The wafer pad assembly of claim 11 further comprising a cooling passage connected to the lower surface of said wafer support pad; said cooling passage having an inlet section and an outlet section, wherein a mass of said inlet section is counterbalanced by a mass of said outlet section.

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17. The wafer pad assembly of claim 16 wherein said bearing surface further comprises a return passageway and a feed passageway, wherein said return passageway is in fluid communication with a return line and the outlet of the cooling passage; and said feed passageway is in fluid communication with the feed line and the inlet of the cooling passage.

18. The wafer pad assembly of claim 16 wherein said bearing surface seals said return passageway and said feed passageway.

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